

**TERUMO PENPOL®**

TRANSFUSION SYSTEMS

# BLOOD BANK REFRIGERATOR - BR Series

ISO 13485



Management  
System  
EN ISO  
13485:2012  
[www.tuv.com](http://www.tuv.com)  
ID: 000047281

Optimize blood care with advanced technology

The most secure  
environment for  
blood products  
outside the  
human body



## FEATURES | BLOOD BANK REFRIGERATOR - BR Series

### Proven refrigeration engineering

Every refrigeration product consists of four major elements – evaporator, compressor, condenser and Expansion valve. These are selected by our refrigeration experts after continuous research. The unique refrigeration technique ensures:

- Consistency in performance
- Temperature will be well within  $4^{\circ}\pm 2^{\circ}\text{C}$  inside any part of the blood bag storage area /trays inside the refrigerator
- Better viability of blood & red cells stored

### Solid construction, quieter presence

- CRCA/HDGI exterior construction after seven tank processes makes the cabinet rust-free and prevents chipping.
- Corrosion free Interior of SS 304 grade also helps in easy cleaning. All interior SS 304 grade stainless steel trays are with sliding facility for easy accessibility of blood bags during loading and unloading. Perforated trays ensures proper air circulation between the bags in the tray.
- Separate acrylic sheet for each tray act as an inner door which prevents cold air loss during door opening.
- Triple pane heated glass door with safety lock and rubber gasket sealing provides insulation and the ultimate protection to the stored blood products with temperature uniformity.
- Castor wheels make it convenient to user to move the equipment in blood bank.
- The compressor is placed on top of the cabinet to prevent dust accumulation, ensuring a maintenance-free compressor life.
- 80 MM thick rigid Polyurethane Insulation ensure better hold over time..

### Flexibility for different storage requirements

Refrigerators are available in different capacities - 64 bags, 128 bags, 160 bags and 360 bags.

### In built voltage stabilizer for increased compressor life

The 1KVA stabilizer corrects input voltage between 160 to 270 VAC and gives a constant output voltage of 190VAC to 245 VAC to the compressor.

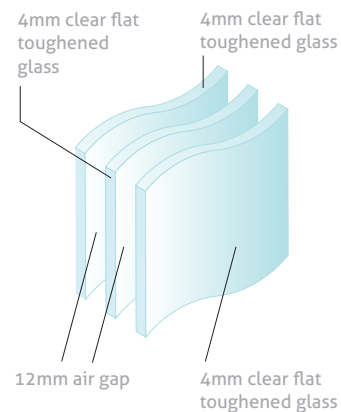
- Prevents supply of excess or low voltage to the refrigerator
- Protection from short circuits and high temperature
- Compressor life is ensured by reliable operation irrespective of input voltage.

### Environment friendly manufacturing

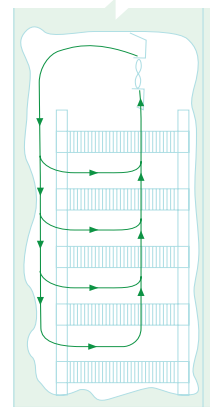
- CFC free urethane foam is used as an insulation in Terumo Penpol Blood Bank Refrigerator.

Our refrigerators are designed to ensure consistency in performance and uniform temperature for all the units of blood in storage

### Triple pane glass door construction for better insulation



### Uniform air circulation in cabinet



### Easy and constant temperature monitoring

- Eye-level display of cabinet temperature allows for easy temperature monitoring even from a distance
- 2 hours battery backup for TRCU ensures uninterrupted temperature tracking
- Terumo Penpol Refrigerators are built with critical alarms and indications which give you instant information about any abnormalities



- One handed operation for replacement of chart paper



- Door Heater avoids moisture condensation in humid atmospheric conditions
- 3 pane heated glass door insulates the refrigerator from atmospheric temperature
- Magnetic door gaskets



- Internal Fan positioned at 90° for uniform temperature maintenance all along the inside of the cabinet. Automatic switch-off of the internal fan prevents the loss of cold air when the cabinet door is open



- Perforated sliding stainless steel tray allows bags to be placed upright with sufficient airspace to reduce "Sardine effect"

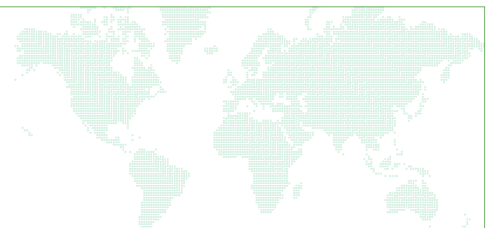


- In built acrylic sheet act as an inner door which ensures minimal loss of cooling.
- Hotline around the mouth of the cabinet to prevent moisture condensation
- Internal Stabilizer ensures steady supply voltage for the whole Blood Storage Cabinet



- Factory calibrated digital sensor dipped in liquid medium for accurate temperature measurement and display
- Flicker free CF lamp for uniform lighting and better visibility of samples inside the cabinet
- Smaller foot print – less width ensures more space

Terumo Penpol sales and service engineers are located close to you for the entire duration of the life-cycle of the equipment. With over 16640 pieces of equipment installed in India and a customer base of more than 2426 clients, Terumo Penpol's reputation for friendly and round-the-clock service is widely recognized and respected.



## SPECIFICATIONS | BLOOD BANK REFRIGERATOR - BR Series

Model	BR064	BR128	BR160	BR360
<b>Type</b>	Vertical	Vertical	Vertical	Vertical
<b>Total storage capacity</b>	64nos of 450ml blood bags 80 nos of 350ml blood bags	128 nos of 450ml blood bags 160 nos of 350ml blood bags	160 nos of 450ml blood bags 200 nos of 350ml blood bags	360 nos of 450ml blood bags 510 nos of 350ml blood bags
<b>Storage capacity per tray</b>	32 nos of blood bags of 450ml/tray 40 nos of blood bags of 350ml/tray	32 nos of blood bags of 450ml/tray 40 nos of blood bags of 350ml/tray	32 nos of blood bags of 450ml/tray 40 nos of blood bags of 350ml/tray	72 nos of blood bags of 450ml/tray 102 nos of blood bags of 350ml/tray
<b>Trays</b>	2 stainless steel slide out trays - fitted with acrylic panel fixed gap (removable type)	4 stainless steel slide out trays - fitted with acrylic panel fixed gap (removable type)	5 stainless steel slide out trays - fitted with acrylic panel fixed gap (removable type)	5 stainless steel slide out trays - fitted with acrylic panel fixed gap (removable type)
<b>Power consumption</b>	550W(Max)	550W(Max)	550W(Max)	700W(Max)
<b>Dimensions (external with caster wheel (W x D x H) in mm*</b>	670 x 678 x 1181	670 x 678 x 1471	670 x 678 x 1791	870 x 958 x 1867
<b>Dimensions (internal) (WxDxH) in mm*</b>	510 x 490 x 610	510 x 490 x 900	510 x 490 x 1220	710 x 770 x 1210
<b>Weight(Approx.)</b>	140 Kg	170 Kg	190 Kg	270 Kg
<b>Door</b>	PUF insulated tripple pane glass door			
<b>Cabinet material</b>	18 swg CRCA/HDGI Sheet - powder coated			
<b>Insulation</b>	80mm thick rigid polyurethane insulation for better Hold over time			
<b>Inner chamber</b>	22 SWG Stainless Steel Sheet			
<b>Input voltage of BBR</b>	230+/-10%VAC, 50Hz, single phase AC			
<b>Stabilizer</b>	1KVA Built in stabilizer			
<b>Chamber temperature range</b>	2°C to 6°C			
<b>Air circulation inside the chamber</b>	Continuously operated forced air circulation using the evaporator fan			
<b>Lamp</b>	CF Lamp			
<b>Compressor</b>	Hermetically sealed compressor			
<b>Refrigerant</b>	R134a(CFC Free)			
<b>Easy serviceability</b>	Environment friendly use and throw gas cylinder for refilling			
<b>Wheels</b>	Caster wheels with front lockable			
<b>Temperature sensing method</b>	Encapsulated digital sensor dipped in 0.25% glycerine solution kept in a plastic bottle			
<b>Temperature controller</b>	Temperature Recorder and Control Unit (TRCU)			
<b>Accuracy of temperature sensor</b>	+/- 0.5°C			
<b>Display</b>	4x7 segment LED (red)			
<b>Display resolution</b>	0.5°C			
<b>Alarms &amp; Indications</b>	Line in		Visual	
	Power		Visual	
	Compressor ON		Visual	
	Heater ON		Visual	
	Temperature High		Audio - Visual	
	Temperature Low		Audio - Visual	
	Door open		Audio - Visual	
	System OK		Visual	
	Battery Low		Visual	
	Battery ON		Visual	
	Power failure		Audio - Visual	
	Sensor failure		Audio - Visual	
	Chart change		Visual	
<b>Accuracy of the chart</b>	+/-1°C			
<b>Duration of the chart</b>	7 days			
<b>Resolution of the recorder</b>	1°C			
<b>Method of recording</b>	Ink pen on paper chart			
<b>Manufacturing standard</b>	ISO 9001 : 2008, EN ISO 13485 : 2012			
<b>Standards &amp; Approval</b>	CE, EUroHS			
<b>MDD classification</b>	Class IIa			

\*Tolerance applicable

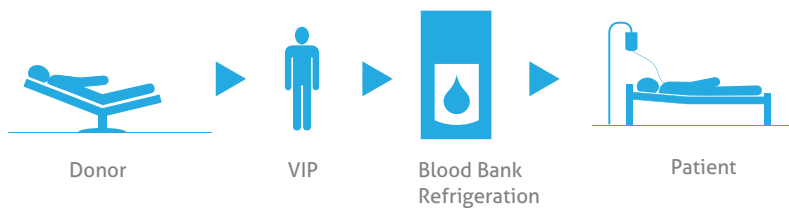
Storage Equipment • BLOOD BANK REFRIGERATOR - BR Series

Started as the first Indian manufacturer of blood bags, Terumo Penpol Private Limited continues to be the market leader in India in the field of equipment and disposables for the Blood Transfusion industry. With a comprehensive range of products covering collection, processing, storage and issue of blood, Terumo Penpol continues to serve the leading blood banks in India and around the world. Terumo Penpol is now a subsidiary of the \$4.5 billion Terumo Corporation, Japan and is a group company of Terumo BCT, USA which leads the Blood Management business of Terumo.

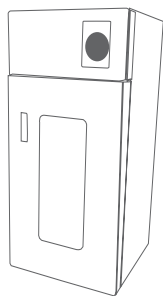


## STORAGE EQUIPMENT

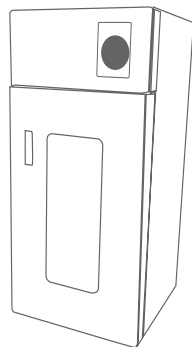
Terumo Penpol guarantees quality equipment which provides the uniform temperature requirement for blood components, and enables the contamination-free storage and transportation of blood from collection to transfusion processes.



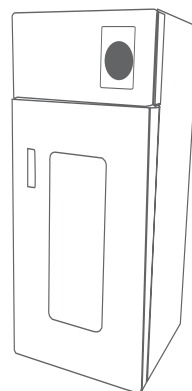
The blood cold chain is a series of interconnected activities involving equipment, personnel and processes that are critical for the safe storage and transportation of blood from collection to transfusion. A Blood Bank Refrigerator is the most critical equipment in the blood cold chain as it is the first place where blood is stored after collection.



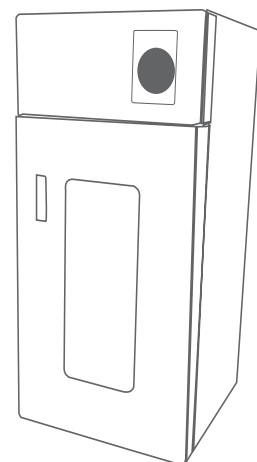
BR064



BR128



BR160



BR360

“ Temperature in all areas of the refrigerator must be maintained within 1°C and 6°C.

Temperature sensor of the refrigerator should be on high shelf and must be in a liquid filled container.”

### *AABB Manual*

“ A successful blood storage procedure is to stand the bags upright and to provide airspace between bags to avoid 'sardine effect'. A visual and audible alarm system is essential in order to indicate unsafe temperature.

The electronic temperature control must range between 1°C to 6°C with a setting accuracy of +/- 1°C, regardless of the load.”

### *WHO Guidelines*

## REGISTERED OFFICE

TERUMO PENPOL Private Limited  
I-2, JAWAHAR NAGAR  
KOWDIAR P.O, TRIVANDRUM – 695003  
KERALA,INDIA.  
Ph.No : 0471-3015500 / 501.  
Fax: 0471-2721519  
CIN: U33112KL1985PTC004531

[www.terumopenpol.com](http://www.terumopenpol.com)

[www.terumobct.com](http://www.terumobct.com)

[pmt@terumopenpol.com](mailto:pmt@terumopenpol.com)

*Toll Free No : 1800 3000 7070*

## OUR PRODUCT RANGE

BLOOD BAGS

DONOR STATION

BLOOD COLLECTION MONITOR

TUBE SEALER

PORTABLE TUBE SEALER

DUAL HEAD TUBE SEALER

COMPOSACLE + INTELLIGENT EXPRESSOR

CRYO BATH

BLOOD BANK REFRIGERATOR

PLATELET AGITATOR AND INCUBATOR

DEEP FREEZERS

PLASMA BATH

FILTERS\*

BLOOD TRANSFUSION SET\*

AUTOMATIC COMPONENT EXTRACTOR\*

STERILE CONNECTING DEVICE\*

APHERESIS SYSTEM AND KITS\*

\* Additional Products for Indian market only.  
Products from Terumo Corporation / Terumo BCT

**TERUMO PENPOL®**